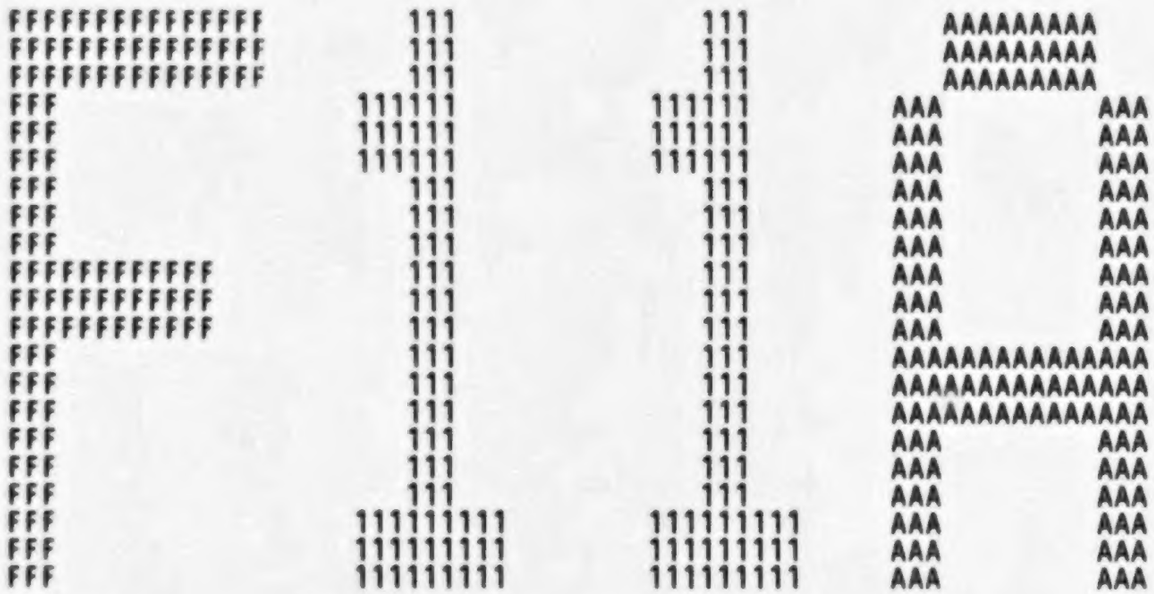
FFFFFFFFFFFFFFF
FFFFFFFFFFFFFFF
FFFFFFFFFFFFFFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
FFFFFFFFFFFF
FFFFFFFFFFFF
FFFFFFFFFFFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
FFF
111
111
111
111111
111111
111111
111
111
111
111
111
111
111
111
111
111
111
111111111
111111111
111111111
111
111
111
111111
111111
111111
111
111
111
111
111
111
111
111
111
111
111
111111111
111111111
111111111
AAAAAAAAA
AAAAAAAAA
AAAAAAAAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAAAAAAAAAAAAAA
AAAAAAAAAAAAAAA
AAAAAAAAAAAAAAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA
AAA AAA

```
MM      MM    AAAAAA    PPPPPPPP    VV      VV  BBBBBBBB    NN      NN
MM      MM    AAAAAA    PPPPPPPP    VV      VV  BBBBBBBB    NN      NN
MMMM  MMMM  AA      AA  PP      PP  VV      VV  BB      BB  NN      NN
MMMM  MMMM  AA      AA  PP      PP  VV      VV  BB      BB  NN      NN
MM  MM  MM  AA      AA  PP      PP  VV      VV  BB      BB  NNNN    NN
MM  MM  MM  AA      AA  PP      PP  VV      VV  BB      BB  NNNN    NN
MM      MM  AA      AA  PPPPPPPP    VV      VV  BBBBBBBB    NN  NN  NN
MM      MM  AA      AA  PPPPPPPP    VV      VV  BBBBBBBB    NN  NN  NN
MM      MM  AAAAAAAAAA  PP          VV      VV  BB      BB  NN    NNNN
MM      MM  AAAAAAAAAA  PP          VV      VV  BB      BB  NN    NNNN
MM      MM  AA      AA  PP            VV  VV    BB      BB  NN      NN      ....
MM      MM  AA      AA  PP            VV  VV    BB      BB  NN      NN      ....
MM      MM  AA      AA  PP              VV      BBBBBBBB    NN      NN      ....
MM      MM  AA      AA  PP              VV      BBBBBBBB    NN      NN      ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

```
;     1          0001  0 MODULE MAPVBN (
;     2          0002  0                 LANGUAGE (BLISS32),
;     3          0003  0                 IDENT = 'V04-000'
;     4          0004  0                 ) =
;     5          0005  1 BEGIN
;     6          0006  1
;     7          0007  1 !
;     8          0008  1 !**************************************************************************
;     9          0009  1 !*                                                                        *
;    10          0010  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                               *
;    11          0011  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                 *
;    12          0012  1 !*  ALL RIGHTS RESERVED.                                                   *
;    13          0013  1 !*                                                                        *
;    14          0014  1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
;    15          0015  1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE  *
;    16          0016  1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
;    17          0017  1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
;    18          0018  1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
;    19          0019  1 !*  TRANSFERRED.                                                           *
;    20          0020  1 !*                                                                        *
;    21          0021  1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
;    22          0022  1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
;    23          0023  1 !*  CORPORATION.                                                           *
;    24          0024  1 !*                                                                        *
;    25          0025  1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
;    26          0026  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
;    27          0027  1 !*                                                                        *
;    28          0028  1 !*                                                                        *
;    29          0029  1 !**************************************************************************
;    30          0030  1
;    31          0031  1 !++
;    32          0032  1 !
;    33          0033  1 ! FACILITY:  F11ACP Structure Level 1
;    34          0034  1 !
;    35          0035  1 ! ABSTRACT:
;    36          0036  1 !
;    37          0037  1 !       This routine maps the specified virtual blocks to their
;    38          0038  1 !       corresponding logical blocks using the supplied window.
;    39          0039  1 !       The window is turned if necessary.
;    40          0040  1 !
;    41          0041  1 ! ENVIRONMENT:
;    42          0042  1 !
;    43          0043  1 !       STARLET operating system, including privileged system services
;    44          0044  1 !       and internal exec routines.
;    45          0045  1 !
;    46          0046  1 !--
;    47          0047  1 !
;    48          0048  1 !
;    49          0049  1 ! AUTHOR:  Andrew C. Goldstein,  CREATION DATE:  3-Mar-1977  12:20
;    50          0050  1 !
;    51          0051  1 ! MODIFIED BY:
;    52          0052  1 !
;    53          0053  1 !       V02-002 LMP0005         L. Mark Pilant,         29-Dec-1981  15:20
;    54          0054  1 !               Add support for Cathedral windows.
;    55          0055  1 !
;    56          0056  1 !       V02-001 ACG0229         Andrew C. Goldstein,    22-Dec-1981  19:44
;    57          0057  1 !               Move updating of PMS$GL_TURN from TURN_WINDOW
```

```
;    58          0058  1 !
;    59          0059  1 !       V02-000 ACG0167         Andrew C. Goldstein,    7-May-1980  18:51
;    60          0060  1 !               Previous revision history moved to F11A.REV
;    61          0061  1 !**
;    62          0062  1
;    63          0063  1
;    64          0064  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
;    65          0065  1 REQUIRE 'SRC$:FCPDEF.B32';
```

```
;    67     0380  1 GLOBAL ROUTINE MAP_VBN (VBN, WINDOW, BLOCK_COUNT, UNMAPPED_BLOCKS) =
;    68     0381  1
;    69     0382  1 !++
;    70     0383  1 !
;    71     0384  1 ! FUNCTIONAL DESCRIPTION:
;    72     0385  1 !
;    73     0386  1 !       This routine maps the specified virtual blocks to their
;    74     0387  1 !       corresponding logical blocks using the supplied window.
;    75     0388  1 !       the window is turned if necessary.
;    76     0389  1 !
;    77     0390  1 ! CALLING SEQUENCE:
;    78     0391  1 !       MAP_VBN (ARG1, ARG2, ARG3, ARG4)
;    79     0392  1 !
;    80     0393  1 ! INPUT PARAMETERS:
;    81     0394  1 !       ARG1: desired VBN
;    82     0395  1 !       ARG2: address of window to use
;    83     0396  1 !       ARG3: number of blocks to map
;    84     0397  1 !             if not present, 1
;    85     0398  1 !
;    86     0399  1 ! IMPLICIT INPUTS:
;    87     0400  1 !       NONE
;    88     0401  1 !
;    89     0402  1 ! OUTPUT PARAMETERS:
;    90     0403  1 !       ARG4: if present, addres to store number of unmapped blocks
;    91     0404  1 !
;    92     0405  1 ! IMPLICIT OUTPUTS:
;    93     0406  1 !       NONE
;    94     0407  1 !
;    95     0408  1 ! ROUTINE VALUE:
;    96     0409  1 !       starting LBN or -1 if no map
;    97     0410  1 !
;    98     0411  1 ! SIDE EFFECTS:
;    99     0412  1 !       window may be turned, header may be read
;   100     0413  1 !
;   101     0414  1 !--
;   102     0415  1
;   103     0416  2 BEGIN
;   104     0417  2
;   105     0418  2 MAP
;   106     0419  2         WINDOW          : REF BBLOCK;
;   107     0420  2
;   108     0421  2 LOCAL
;   109     0422  2         COUNT,                                  ! number of blocks to map
;   110     0423  2         UNMAPPED,                               ! address to store unmapped block count
;   111     0424  2         DUMMY,                                  ! place for above by default
;   112     0425  2         FCB             : REF BBLOCK,           ! address of FCB of file
;   113     0426  2         HEADER          : REF BBLOCK,           ! address of file header
;   114     0427  2         LBN;                                    ! resulting LBN of map
;   115     0428  2
;   116     0429  2 EXTERNAL
;   117     0430  2         PMS$GL_TURN     : ADDRESSING_MODE (GENERAL);
;   118     0431  2                                                 ! system count of window turns
;   119     0432  2
;   120     0433  2 EXTERNAL ROUTINE
;   121     0434  2         MAP_WINDOW,                             ! scan window map
;   122     0435  2         READ_HEADER,                            ! read file header
;   123     0436  2         TURN_WINDOW,                            ! turn window
```

```
;  124     0437  2          REMAP_FILE;                         ! remap the file completely
;  125     0438  2
;  126     0439  2
;  127     0440  2      ! Check the VBN for legality - i.e., non-zero and within the file size
;  128     0441  2      ! given in the FCB.
;  129     0442  2      !
;  130     0443  2
;  131     0444  2      FCB = .WINDOW[WCB$L_FCB];
;  132     0445  2      IF .VBN EQL 0 OR .VBN GTRU .FCB[FCB$L_FILESIZE]
;  133     0446  2      THEN RETURN -1;
;  134     0447  2
;  135     0448  2      ! If the file is multi-header, scan the extension FCB's for the one
;  136     0449  2      ! containing the desired VBN. The right FCB is identified by noting that
;  137     0450  2      ! there are no more, or that the start VBN of the next one is greater than
;  138     0451  2      ! the desired VBN.
;  139     0452  2      !
;  140     0453  2
;  141     0454  2      UNTIL
;  142     0455  2          (IF .FCB[FCB$L_EXFCB] EQL 0 THEN 1
;  143     0456  2           ELSE .BBLOCK [.FCB[FCB$L_EXFCB], FCB$L_STVBN] GTRU .VBN
;  144     0457  2          )
;  145     0458  2      DO FCB = .FCB[FCB$L_EXFCB];
;  146     0459  2
;  147     0460  2      ! Default the optional arguments.
;  148     0461  2      !
;  149     0462  2
;  150     0463  2      COUNT = (IF ACTUALCOUNT GEQ 3
;  151     0464  2              THEN .BLOCK_COUNT
;  152     0465  2              ELSE 1
;  153     0466  2              );
;  154     0467  2      UNMAPPED = (IF ACTUALCOUNT GEQ 4
;  155     0468  2              THEN .UNMAPPED_BLOCKS
;  156     0469  2              ELSE DUMMY
;  157     0470  2              );
;  158     0471  2
;  159     0472  2      ! If an extension was done on a file which was has Cathedral windows, it is
;  160     0473  2      ! necessary to remap the file to correctly map the extended portion of the
;  161     0474  2      ! file.
;  162     0475  2      !
;  163     0476  2
;  164     0477  2      IF .WINDOW[WCB$V_CATHEDRAL] AND NOT .WINDOW[WCB$V_COMPLETE]
;  165     0478  2      THEN REMAP_FILE (7);
;  166     0479  2
;  167     0480  2      ! Attempt to map the transfer with the existing window. If the map fails
;  168     0481  2      ! completely, turn the window and try once more. When any blocks map,
;  169     0482  2      ! return the relevant data.
;  170     0483  2      !
;  171     0484  2
;  172     0485  2      DECR I FROM 2 TO 1 DO
;  173     0486  3          BEGIN
;  174     0487  3
;  175     0488  3          LBN = KERNEL_CALL (MAP_WINDOW, .VBN, .WINDOW, .COUNT, .UNMAPPED);
;  176     0489  3          IF .LBN NEQ -1 THEN EXITLOOP;
;  177     0490  3
;  178     0491  3          HEADER = READ_HEADER (0, .FCB);
;  179     0492  3          KERNEL_CALL (TURN_WINDOW, .WINDOW, .HEADER, .VBN, .FCB[FCB$L_STVBN]);
;  180     0493  3          PMS$GL_TURN = .PMS$GL_TURN + 1;     ! count window turn in PMS data base
```

```
;  181          0494  3
;  182          0495  2      END;
;  183          0496  2
;  184          0497  2 RETURN .LBN;
;  185          0498  2
;  186          0499  1 END;                                    ! end of routine MAP_VBN

                                                                .TITLE  MAPVBN
                                                                .IDENT  \V04-000\

                                                                .EXTRN  PMS$GL_TURN, MAP_WINDOW
                                                                .EXTRN  READ_HEADER, TURN_WINDOW
                                                                .EXTRN  REMAP_FILE, SYS$CMKRNL

                                                                .PSECT  $CODE$,NOWRT,2

                                                07FC 00000      .ENTRY  MAP_VBN, Save R2,R3,R4,R5,R6,R7,R8,R9,R10       ; 0380
                                    5A 00000000G  9F   9E 00002 MOVAB   @#SYS$CMKRNL, R10                               ;
                                    5E            04   C2 00009 SUBL2   #4, SP                                        ;
                                    52        08  AC   D0 0000C MOVL    WINDOW, R2                                    ; 0444
                                    53        18  A2   D0 00010 MOVL    24(R2), FCB                                   ;
                                    55        04  AC   D0 00014 MOVL    VBN, R5                                       ; 0445
                                                  06   13 00018 BEQL    1$                                            ;
                                38  A3            55   D1 0001A CMPL    R5, 56(FCB)                                   ;
                                                  04   1B 0001E BLEQU   2$                                            ;
                                    50            01   CE 00020 1$:    MNEGL   #1, R0                                ; 0446
                                                  04   00023       RET                                               ;
                                    50        0C  A3   D0 00024 2$:    MOVL    12(FCB), R0                           ; 0455
                                                  0B   13 00028       BEQL    3$                                    ;
                                    55        2C  A0   D1 0002A       CMPL    44(R0), R5                            ; 0456
                                                  05   1A 0002E       BGTRU   3$                                    ;
                                    53            50   D0 00030       MOVL    R0, FCB                               ; 0458
                                                  EF   11 00033       BRB     2$                                    ;
                                    03            6C   91 00035 3$:    CMPB    (AP), #3                              ; 0463
                                                  06   1F 00038       BLSSU   4$                                    ;
                                    58        0C  AC   D0 0003A       MOVL    BLOCK_COUNT, COUNT                    ; 0464
                                                  03   11 0003E       BRB     5$                                    ;
                                    58            01   D0 00040 4$:    MOVL    #1, COUNT                             ; 0463
                                    04            6C   91 00043 5$:    CMPB    (AP), #4                              ; 0467
                                                  06   1F 00046       BLSSU   6$                                    ;
                                    57        10  AC   D0 00048       MOVL    UNMAPPED_BLOCKS, UNMAPPED             ; 0468
                                                  03   11 0004C       BRB     7$                                    ;
                                    57            6E   9E 0004E 6$:    MOVAB   DUMMY, UNMAPPED                       ; 0467
                            0A          0B    A2   06   E1 00051 7$:    BBC     #6, 11(R2), 8$                        ; 0477
                            05          0B    A2   05   E0 00056       BBS     #5, 11(R2), 8$                        ;
                                  0000G   CF         00   FB 00059       CALLS   #0, REMAP_FILE                        ; 0478
                                    54            02   D0 00060 8$:    MOVL    #2, I                                 ; 0492
                                                  57   DD 00063 9$:    PUSHL   UNMAPPED                              ; 0488
                                            0104  8F   BB 00065       PUSHR   #^M<R2,R8>                            ;
                                                  55   DD 00069       PUSHL   R5                                    ;
                                                  04   DD 0006B       PUSHL   #4                                    ;
                                                  5E   DD 0006D       PUSHL   SP                                    ;
                                            0000G CF   9F   0006F       PUSHAB  MAP_WINDOW                            ;
                                    6A            07   FB 00073       CALLS   #7, SYS$CMKRNL                        ;
                                    56            50   D0 00076       MOVL    R0, LBN                               ;
                            FFFFFFFF    8F            56   D1 00079       CMPL    LBN, #-1                              ; 0489
```

```
                                                29  12 00080          BNEQ    10$                                     ;
                                                53  DD 00082          PUSHL   FCB                                     ; 0491
                                                7E  D4 00084          CLRL    -(SP)                                   ;
                                      0000G     CF  02 FB 00086       CALLS   #2, READ_HEADER                         ;
                                                59  50 D0 0008B       MOVL    R0, HEADER                              ;
                                            2C  A3  DD 0008E          PUSHL   44(FCB)                                 ; 0492
                                                55  DD 00091          PUSHL   R5                                      ;
                                          0204  8F  BB 00093          PUSHR   #^M<R2,R9>                              ;
                                                04  DD 00097          PUSHL   #4                                      ;
                                                5E  DD 00099          PUSHL   SP                                      ;
                                          0000G CF  9F 0009B          PUSHAB  TURN_WINDOW                             ;
                                                6A  07 FB 0009F       CALLS   #7, SYS$CMKRNL                          ;
                                     00000000G      00  D6 000A2      INCL    PMS$GL_TURN                             ; 0493
                                                B8  54 F5 000A8       SOBGTR  I, 9$                                   ; 0485
                                                50  56 D0 000AB 10$:  MOVL    LBN, R0                                 ; 0497
                                                    04 000AE          RET                                             ; 0499

; Routine Size:  175 bytes,    Routine Base:  $CODE$ + 0000

;  187          0500  1
;  188          0501  1 END
;  189          0502  0 ELUDOM



;                                   PSECT SUMMARY
;
;       Name                    Bytes                           Attributes
;  $CODE$                           175  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)


;                               Library Statistics
;                                        -------- Symbols --------      Pages       Processing
;       File                             Total    Loaded   Percent      Mapped      Time
;  _$255$DUA28:[SYSLIB]LIB.L32;1          18619         7         0      1000          00:01.9



;                                   COMMAND QUALIFIERS
;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:MAPVBN/OBJ=OBJ$:MAPVBN MSRC$:MAPVBN/UPDATE=(ENH$:MAPVBN)
; Size:          175 code + 0 data bytes
; Run Time:        00:07.4
```

```
; Elapsed Time:    00:24.2
; Lines/CPU Min:    4048
; Lexemes/CPU-Min: 12870
; Memory Used:  99 pages
; Compilation Complete
```